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         OCT 02
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                 Zentralblatt
         OCT 19
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              19 SEPTEMBER 2007: CURRENT WINDOWS VERSION IS V8.2,
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              AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.
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L1 1 DE 19541339/PN (DE19541339/PN)

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L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:410587 CAPLUS

DOCUMENT NUMBER: 127:36664

ENTRY DATE: Entered STN: 03 Jul 1997

TITLE: Recovery of carbon monoxide from nitrogen-contaminated gas mixture containing hydrogen, carbon monoxide, and

methane

INVENTOR(S): Fabian, Rainer
PATENT ASSIGNEE(S): Linde Aq, Germany

SOURCE: Ger. Offen., 11 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent LANGUAGE: German

INT. PATENT CLASSIF.:

MAIN: C01B031-18 SECONDARY: C01B003-50

ADDITIONAL: C07C009-04; C07C051-15

CLASSIFICATION: 49-2 (Industrial Inorganic Chemicals)

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

-----DE 19541339 A1 19970507 DE 1995-19541339 19951106 <--

DE 19541339 B4 20060810

PRIORITY APPLN. INFO.: DE 1995-19541339 19951106

PATENT CLASSIFICATION CODES:

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

DE 19541339 ICM C01B031-18 ICS C01B003-50

ICA C07C009-04; C07C051-15

IPCI C01B0031-18 [I,A]; C01B0031-00 [I,C*]; C01B0003-50

[I,A]; C01B0003-00 [I,C*]

IPCR C01B0003-00 [I,C*]; C01B0003-50 [I,A]; C01B0031-00

[I,C*]; C01B0031-18 [I,A]; F25J0003-02 [I,A];

F25J0003-02 [I,C*]; F25J0003-06 [I,A]; F25J0003-06

[I,C*]

ECLA C01B003/50D; C01B031/18; F25J003/02A6; F25J003/02C14;

F25J003/02C10; F25J003/06C10

ABSTRACT:

The procedure involves (1) cooling and partial condensation of a H2-CO-CH4 mixture containing N2, (2) withdrawal of 1st H2-rich gaseous fraction, (3) charging of a H2-CO-CH4-N2 condensate to a H2-stripping column, (4) separation of a 2nd H2-rich fraction and a CO-rich fraction containing CH4 and N2, (5) separation of the latter fraction in a 1st rectification column to obtain a N2-rich fraction and CO-rich fraction containing CH4, (6) charging of the latter fraction into a 2nd rectification column to obtain a high-purity CO fraction and a CH4-containing fraction.

SUPPL. TERM: carbon monoxide recovery cryogenic distn

INDEX TERM: 630-08-0P, Carbon monoxide, preparation

ROLE: PUR (Purification or recovery); PREP (Preparation) (recovery of carbon monoxide from nitrogen-contaminated

gas mixture containing hydrogen, carbon monoxide, and methane)

INDEX TERM: 74-82-8, Methane, processes 1333-74-0, Hydrogen, processes

7727-37-9, Nitrogen, processes

ROLE: REM (Removal or disposal); PROC (Process) (removal in recovery of carbon monoxide from

nitrogen-contaminated gas mixture containing hydrogen, carbon

monoxide, and methane)

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L2 1 EP 0933330/PN (EP933330/PN)

=> d 12 iall

L2 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:

1999:505775 CAPLUS

DOCUMENT NUMBER:

131:131939

ENTRY DATE:

Entered STN: 16 Aug 1999

TITLE:

Separation of carbon monoxide from

nitrogen-contaminated gaseous mixtures also containing

hydrogen

INVENTOR(S):

McNeil, Brian Alfred; Truscott, Alan Geoffrey

PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA

SOURCE:

Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW

DOCUMENT TYPE:

Patent

LANGUAGE:

English

INT. PATENT CLASSIF.:

MAIN:

C01B003-50

SECONDARY:

F25J003-02

CLASSIFICATION:

49-9 (Industrial Inorganic Chemicals)

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

					21112
EP 933330 EP 933330		A2	19990804	EP 1999-300586	•
EP 933330			20030611		
				GR, IT, LI, LU, 1	NL, SE, MC, PT,
-		LV, FI,			
US 6070430		Α	20000606	US 1999-240942	
PRIORITY APPLN.				GB 1998-2231	A 19980202
PATENT CLASSIFIC					
PATENT NO.	CLASS	PATENT I	FAMILY CLASS	FICATION CODES	
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EP 933330	ICM	C01B003-	-50		
	ICS	F25J003-	-02		
	IPCI	C01B0003	3-50 [ICM, 6];	: C01B0003-00 [ICM	6,C*];
		F25J0003	3-02 [ICS,6]		
	IPCR	C01B0003	3-00 [I,C*];	C01B0003-50 [I,A];	C01B0031-00
				[I,A]; F25J0003-02	
		F25J0003	3-02 [I,C*];	F25J0003-06 [I,A]	F25J0003-06
		[I,C*]			
	ECLA	C01B003/	50D; C01B031	L/18; F25J003/02A6;	: F25J003/02C14:
			02C10; F25J0		
US 6070430	IPCI		3-02 [ICM,7]	•	
	IPCR			C01B0003-50 [I,A];	C01B0031-00
				[I,A]; F25J0003-02	
				F25J0003-06 [I,A];	
		[I,C*]			12300003 00
	NCL	- , -	000; 062/920	0.000	
	ECLA			L/18; F25J003/02A6;	F25.T003/02C14+
			02C10; F25J		.1230003/02014;
		,	, 12500	,05,00010	

ABSTRACT:

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

Carbon monoxide is separated from a gaseous mixture containing hydrogen and carbon monoxide and contaminated with nitrogen by partially condensing the mixture to provide a hydrogen-enriched vapor feed fraction and a carbon monoxide-enriched liquid feed fraction; separating nitrogen from carbon monoxide in said liquid fraction

in a distillation column to provide nitrogen-freed liquid carbon monoxide bottoms and

nitrogen-enriched vapor overheads; condensing at least a portion of the overheads against a recycle heat pump stream derived from the gaseous mixture and containing hydrogen and carbon monoxide; and returning at least a portion of said condensed overheads to said nitrogen-separation column as reflux. The recycle heat pump stream usually is provided by condensation from the hydrogen-enriched vapor feed fraction and/or by separation from the carbon monoxide-enriched liquid feed fraction.

SUPPL. TERM: carbon monoxide sepn nitrogen removal INDEX TERM: Condensation (physical)

Distillation

Distillation columns

Separation Synthesis gas

(separation of carbon monoxide from nitrogen-contaminated

gaseous mixts. also containing hydrogen).

INDEX TERM: 630-08-0P, Carbon monoxide, preparation 1333-74-0P,

Hydrogen, preparation

ROLE: PUR (Purification or recovery); PREP (Preparation) (separation of carbon monoxide from nitrogen-contaminated

gaseous mixts. also containing hydrogen)

INDEX TERM: 7727-37-9, Nitrogen, processes

ROLE: REM (Removal or disposal); PROC (Process)

(separation of carbon monoxide from nitrogen-contaminated

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=> s ep 0928936/pn
            1 EP 0928936/PN
L3
                (EP928936/PN)
=> d 13 iall
    ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:
                   1999:457950 CAPLUS
DOCUMENT NUMBER:
                       131:75743
ENTRY DATE:
                       Entered STN: 27 Jul 1999
                       Separation of carbon monoxide from
TITLE:
                       nitrogen-contaminated gaseous mixtures
                       McNeil, Brian Alfred; Scharpf, Eric William
INVENTOR(S):
                       Air Products and Chemicals, Inc., USA
PATENT ASSIGNEE(S):
                       Eur. Pat. Appl., 31 pp.
SOURCE:
                       CODEN: EPXXDW
DOCUMENT TYPE:
                       Patent
LANGUAGE:
                       English
INT. PATENT CLASSIF.:
           MAIN:
                       F25J003-02
                       49-9 (Industrial Inorganic Chemicals)
CLASSIFICATION:
                       Section cross-reference(s): 47
FAMILY ACC. NUM. COUNT:
PATENT INFORMATION:
    PATENT NO.
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                              DATE
                                       APPLICATION NO.
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                                         -----
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    EP 928936
                        A2
                              19990714 EP 1999-300070
                                                               19990106 <--
    EP 928936
                       A3
                              19991013
    EP.928936
                       B1
                              20021218
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO
    US 6062042
                        Α
                              20000516
                                         US 1999-225068
                                                               19990104
PRIORITY APPLN. INFO.:
                                         GB 1998-693
                                                            A 19980113
PATENT CLASSIFICATION CODES:
               CLASS PATENT FAMILY CLASSIFICATION CODES
 PATENT NO.
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               ICM
EP 928936
                      F25J003-02
                IPCI
                      F25J0003-02 [ICM, 6]
                IPCR
                      F25J0003-02 [I,C*]; F25J0003-02 [I,A]; F25J0003-06
                      [I,C*]; F25J0003-06 [I,A]
                ECLA
                      F25J003/02A6; F25J003/02C14; F25J003/02C10;
                      F25J003/06C10
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                      F25J0003-02 [I,C*]; F25J0003-02 [I,A]; F25J0003-06
                      [I,C*]; F25J0003-06 [I,A]
               NCL
                      062/625.000; 062/632.000; 062/920.000
                ECLA
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ABSTRACT:

Carbon monoxide is separated from a gaseous mixture containing hydrogen and contaminated

F25J003/06C10

with nitrogen by separating hydrogen and carbon monoxide contents to provide a carbon monoxide-enriched nitrogen-containing stream and separating carbon monoxide and

F25J003/02A6; F25J003/02C14; F25J003/02C10;

nitrogen contents of the stream in a nitrogen-separation column to provide a nitrogen-enriched overheads vapor and a nitrogen-freed bottoms. The overheads vapor is washed with liquid nitrogen to remove carbon monoxide therefrom and the resultant carbon monoxide-enriched liquid nitrogen is returned to the column as addnl. reflux. The liquid nitrogen wash simultaneously reduces the loss of carbon monoxide with the nitrogen-enriched vapor and provides refrigeration to

the process. When the gaseous feed is a synthesis gas also containing methane, the methane and carbon monoxide contents can be separated before or after separation of the

nitrogen and carbon monoxide contents.

SUPPL. TERM: sepn carbon monoxide nitrogen contaminated gas; synthesis

gas carbon monoxide sepn

INDEX TERM: Separation

(cryogenic; separation of carbon monoxide from

nitrogen-contaminated gaseous mixts.)

INDEX TERM: Synthesis gas

(separation of carbon monoxide from nitrogen-contaminated

gaseous mixts.)

INDEX TERM: 74-82-8P, Methane, preparation 1333-74-0P, Hydrogen,

preparation

ROLE: PEP (Physical, engineering or chemical process); PUR

(Purification or recovery); PREP (Preparation); PROC

(Process)

(separation of carbon monoxide from nitrogen-contaminated

gaseous mixts.)

INDEX TERM: 630-08-0P, Carbon monoxide, preparation

ROLE: PUR (Purification or recovery); PREP (Preparation)

(separation of carbon monoxide from nitrogen-contaminated

gaseous mixts.)

INDEX TERM: 7727-37-9, Nitrogen, processes

ROLE: REM (Removal or disposal); PROC (Process)

(separation of carbon monoxide from nitrogen-contaminated

gaseous mixts.)